CLAIMS

1. A high speed non-volatile electronic memory configuration comprising:

a high speed volatile memory;

a non-volatile memory coupled to the high speed volatile memory;

a controller coupled to the high speed volatile memory and the non-volatile memory that monitors data storage changes made within the high speed volatile memory and controls the transfer of stored data from the high speed volatile memory to the non-volatile memory, and vice-versa, when power is above a particular minimum operating voltage level; and

a power level detector that detects when power is above the particular minimum operating voltage level.

2. The configuration of claim 1, further comprising:

a power storage element that stores transient power for use by at least one of the high speed volatile memory, the non-volatile memory, and the controller when power is below the particular minimum operating voltage level.

3. The configuration of claim 2, wherein the controller controls the transfer of stored data from the high speed

volatile memory to the non-volatile memory for a limited period of time using the transient power stored by the power storage element when power is below the particular minimum operating voltage level.

4. The configuration of claim 2, wherein the power storage element comprises bulk capacitance having a value in the hundreds of microfarads.

5. The configuration of claim 1, wherein the high speed volatile memory is a high speed dynamic random access memory.

6. The configuration of claim 5, wherein the high speed volatile memory is a high speed, dual port, dynamic random access memory, wherein the controller is coupled to a first port of the high speed, dual port, dynamic random access memory, and wherein both the controller and the non-volatile memory are coupled to a second port of the high speed, dual port, dynamic random access memory.

7. The configuration of claim 1, wherein the high speed volatile memory is a high speed, dual port, volatile memory, wherein the controller is coupled to a first port of the high

speed, dual port, volatile memory, and wherein both the controller and the non-volatile memory are coupled to a second port of the high speed, dual port, volatile memory.

8. The configuration of claim 1, wherein the non-volatile memory is a low speed non-volatile memory relative to the high speed volatile memory.

9. The configuration of claim 1, wherein the non-volatile memory is a non-volatile flash memory.

10. The configuration of claim 1, wherein the controller is one of a microprocessor, a microcontroller, a programmable processing device, and a fixed function processing device.

11. The configuration of claim 1, wherein the controller prevents the transfer of stored data from the high speed volatile memory to the non-volatile memory, and vice-versa, when power is below the particular minimum operating voltage level.

12. The configuration of claim 1, wherein the controller controls the transfer of stored data from the non-volatile memory to the high speed volatile memory immediately following a

restoration of power to above the particular minimum operating voltage level.

13. The configuration of claim 1, wherein the power level detector provides an indication to the controller that power is above the particular minimum operating voltage level.

14. A method for storing data, the method comprising:

monitoring data storage changes made within a high speed volatile memory;

permitting stored data to be transferred from the high speed volatile memory to a non-volatile memory, and vice-versa, based upon the monitored data storage changes when power is above a particular minimum operating voltage level; and

preventing stored data to be transferred from the high speed volatile memory to the non-volatile memory, and vice-versa, when power is below the particular minimum operating voltage level.

15. The method of claim 14, further comprising:

detecting when power is above the particular minimum operating voltage level.

16. The method of claim 15, further comprising:

providing an indication that power is above the particular minimum operating voltage level.

17. The method of claim 14, further comprising:

detecting when power is below the particular minimum operating voltage level.

18. The method of claim 17, further comprising:

providing an indication that power is below the particular minimum operating voltage level.

19. The method of claim 18, further comprising:

providing a transient power when power is below the particular minimum operating voltage level; and

permitting stored data to be transferred from the high speed volatile memory to a non-volatile memory based upon the monitored data storage changes for a limited period of time using the transient power when power is below the particular minimum operating voltage level.

20. The method of claim 14, further comprising:

controlling the transfer of stored data from the non-

volatile memory to the high speed volatile memory immediately following a restoration of power to above the particular minimum operating voltage level.

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